

**HETERAGRION EBORATUM, A NEW SPECIES OF
DAMSELFLY FROM GUATEMALA**

(ODONATA: MEGAPODAGRIONIDAE)

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The high, pine-covered hills of southeastern Guatemala were found during a brief trip in the summer of 1963 to have a limited Odonate fauna that was quite distinct from that of the largely farmed, adjacent lower elevation countryside. The most interesting Odonate found during that trip was a singularly beautiful, large new species of *Heteragrion*, which is most closely related to *H. majus* Selys. The following description is based partially on criteria discussed by Williamson (1919) in his important revision of the genus.

***Heteragrion eboratum*, n. sp.**

Holotype male. *Head*.—Entire face shining white, ranging from opaque to translucent and transparent; rear of vertex velvet black. Frons and clypeus acutely angled. Labium and maxilla pale brown; hooks dark brown; mandibles white laterally with dark dorsal and anterior edging; teeth shining black. Labrum and anteclypeus opaque white; postclypeus transparent white; frons translucent white; gena, front of vertex, first and basal two-thirds of antenna opaque white. Fine black hairs on front margin of labrum and clypeus. Rear of vertex velvet black, this color extending forward to envelope all three ocelli. Tip of second segment and remainder of antenna black. Rear of head pale.

Prothorax.—Fore lobe and dorsum of medial lobe velvet black, the fore lobe with a posterolateral elongate yellowish spot. Sides of medial lobe and propleuron obscure yellow-brown, the margins of the sclerites edged with darker brown. Hind lobe prominent, entire, black.

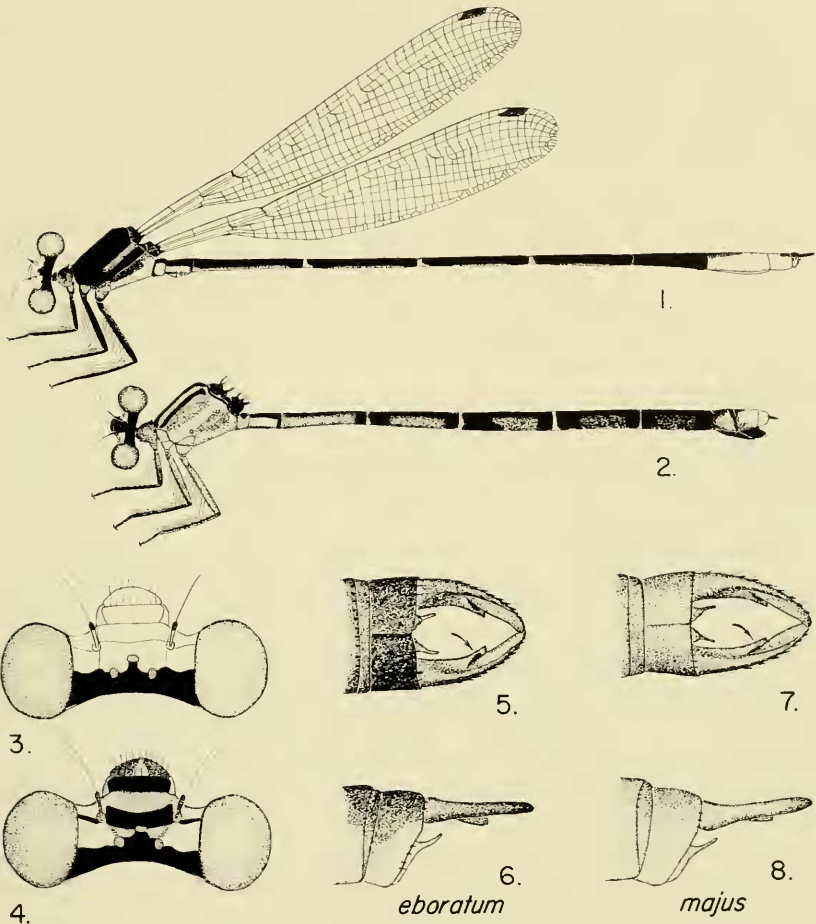
Pterothorax.—Entire mesopleuron velvet black except for obscure yellow-brown spot on mesinfraepisternum. Dorsal half of metepisternum with an obscure yellowish line extending forward to spiracle. Ventral half of metepisternum and dorsal half of metepimeron obscure brown. Ventral half of metepimeron and sterna yellow. Metinfraepisternum with obscure yellow spot. Wing bases largely yellow with black edging.

Venation.—Veins black, stigmata dark brown, covering three cells. Postnodal crossveins 25 in fore wing, 22 in hind wing. Arculus 0.5 mm. distal from cubital-anal crossvein in both wings. Two post-quadrangular cells in each wing.

Legs.—Completely black, except for obscure yellow on coxal bases and dark brown on dorsum of hind femur.

Abdomen.—Black, except as follows: sides and apical ring of 1; sides of 2, except for line along ventral margin; ventral line on all but apical fifth of 3; basal ring and obscure ventral line from basal third to apical fifth of 4-6; obscure subapical mark on sides of 7; all of 8 except for obscure dark dorsal triangle extending apically about two-thirds the length of the segment; all of 9, except for dorsal black mark on apical half; sides of 10. Pale color yellow on 1-2; obscure yellow-brown on 3-6; reddish yellow on 7-10. Terminal segments expanded noticeably.

Appendages.—Dorsal appendages black, except at very base, of usual sub-



Heteragrion eboratum, n.sp. and *Heteragrion majus* Selys

Figs. 1-8. *Heteragrion eboratum*, n. sp. Fig. 1, color pattern and venation, male; fig. 2, same, female; fig. 3, dorsum of head, male; fig. 4, same, female; fig. 5, male appendages, dorsal view; fig. 6, same, lateral view. *H. majus* Selys. Fig. 7, male appendages, dorsal view; fig. 8, same, lateral view.

cylindric, forcipate style of genus. Mesal-ventral tooth prominent; sinus between this tooth and small, black mesal denticulate ridge well developed (arrow of figure 5). Ventral appendage very reduced, thin, cylindrical, pale.

Dimensions.—Abdomen 47 mm; hind wing 32 mm.

Variations among type series.—The nine males show little variation, except for size. The extent of obscure black on the dorsa of the terminal abdominal segments varies from two-thirds of 8 and 9 to one-third of 8 and none of 9 pale.

Two males have a very obscure pale line on the posterior third of the humeral suture. The abdomen ranges from 46 to 51 mm; the hind wing from 31 to 33 mm.

Allotype female. Head.—Labium and maxilla pale yellow with dark brown hooks; mandibles yellow laterally with brown teeth; labrum dark brown with pale medial triangle; anteclypeus and postclypeus brown, this color shading into gleaming black along the clypeal angle; frons, gena, and vertex dull yellow, except as follows: brown on frons between antenna bases, black transverse dash behind antenna bases, black subrectangular mark on top of frons between antennae, and black transverse mark occupying entire posterior half of vertex and enveloping the ocelli. An obscure brown mark extends from lateral ocelli to antennae. Basal segment of antenna yellow, remainder brown. Rear of head pale.

Prothorax.—Obscure yellow-gray, shading to yellow below; velvet black as follows: central half of fore lobe, tapering to rear; central third of hind lobe, forming a rounded spot. Hind lobe entire, with lateral extremities and rear border yellow.

Pterothorax.—Obscure yellow-gray shading to gray below, black as follows: middorsal line 0.5 mm wide, central third of mesepisternum, this line widened abruptly to rear to touch humeral suture. Obscure brown line on dorsal half of mesepimeron, obscure gray covering ventral half of metepisternum. Ventral half of metepimeron and sterna yellow.

Venation.—As in male.

Legs.—Obscure gray, darker on ventral surfaces of tibiae and apices of fore femora.

Abdomen.—Obscure yellow-gray, black as follows: dorsal dash on 1 and stripe on 2, these marks interrupted by a medial yellow line which does not reach apex of 2; dorsa of 3–8, except basal rings on 3–7 which are interrupted on 4–7 and medial yellow line extending five-sixths the length of 3–6. Black of 3–7 encircles apical sixth to fourth of segment, obscure brown encircles basal sixth to third, enclosing ventral pale stripe which is increasingly darker on posterior segments. 8 with pale postero-lateral dash; 9 and 10 completely yellow except for basal dorsal black spot on 9.

Ovipositor.—Dark brown to black; genital valves with a single row of denticles. Indistinguishable from Williamson's (1919) figures for *H. majus*.

Dimensions.—Abdomen 34 mm; hind wing 42 mm.

Variations among type series.—The principal variations among the the five females of the type series involve extent of dark coloration, which appears to reflect maturity of the imago. The allotype is the darkest of the five, and, hence, is probably the most mature. The other four females have the brown mark between the ocelli and the antennae absent or obscure. One female, evidently the least mature, has the black color of the rear of the vertex interrupted laterally to form indistinct marks which resemble the postocular spots of the family Coenagrionidae, though in the present specimen the marks are confluent with the pale color of the rear of the head. Two paratype females have a distinct black line on the mesepimeron, whereas the allotype and two other paratypes have obscure gray here. The abdomen ranges from 31 to 33 mm and the hind wing from 38 to 40 mm; hence, the allotype is the largest of the series.

Material examined.—Holotype male: Socorro (abandoned silver mine), 3 km. northeast of Ermita and about 5 km. east of Concepción las Minas, Dept. Chiquimula, Guatemala, 13 July 1963. The elevation of this locality is 1,100 meters. Allotype: same locality, 14 July 1963. Paratypes: 8 males, 4 females, all from the same locality, 13–15 July 1963, except for three males from Mina San Vicente, about 1 km. north of previous locality, elevation 1,200 meters, 15 July 1963. An additional male collected at this last locality was prepared for cytogenetic examination and sent to Mr. Robert Cumming; it has not been included in the type series. The holotype and allotype will be deposited in the University of Florida collection. Paratypes will be deposited in the U.S. National Museum, The Academy of Natural Sciences, Philadelphia, and the University of Michigan Museum of Zoology.

The new species is closely related to *H. majus*, which has been previously reported from Costa Rica, Panama, and Peru. The principal distinction between the two species is in the color and the color pattern—the characters which are of the greatest taxonomic utility in the genus as a whole, according to Williamson. *Eboratum* is a very dark species with a shining white face; *majus* is much less dark, especially on the thoracic dorsum, and has a golden yellow face. Other respects in which the male of *majus* differs are as follows: the frons has a transverse black dash behind the antennae (as in the female of *eboratum*), the hind lobe of the prothorax has lateral pale lines, the pterothorax has a yellow antehumeral line and a broader yellow stripe on the humeral suture, the legs are brown, the abdomen has a thin dorsal line on 1–3 (except for apical fifth), all of segments 8–10 and the dorsal appendages are pale, except for a small dorsal black mark on 8. There is also a structural distinction that is probably consistent: the dorsal appendage of *majus* has a smaller mesal-ventral hook, a less prominent denticulate mesal ridge above this hook (arrow in figure 7), and a less prominent sinus between the ridge and the hook.

The female of *majus* is distinguished by the greater extent of black on the head, especially the transverse markings behind the antennae, a black mark in front of the antennae, contrasting pale outer extremities of the anteclypeus, and pale color of the hind lobe of the prothorax confined to a posterior line and postero-lateral lobes (Williamson, 1919, figures 43, 157). There appears to be no structural distinction between the two species.

After this paper had been submitted, Prof. Minter Westfall located a male and female specimen of *H. majus* from Costa Rica in the Calvert collection that had been studied by Williamson. The male is substantially identical to the Panamanian specimen described above. The female differs from *H. eboratum* as stated, except that the anteclypeus of the two species is identical in appearance. The females of *H.*

eboratum, however, possess a central contrasting pale mark on the labrum, whereas *H. majus* is uniformly obscure here.

The area in which the new species was collected is a beautiful pine-forested hill district on the frontier between Honduras, El Salvador, and Guatemala. The district is a colonial silver mining area of which only one mine is being operated currently, and that on a very limited basis. The author's visit was primarily for the purpose of investigating the geology of this remote area.

Most of the Odonates of this hill country live in small, shaded streams that hug the precipitous hill slopes. Three Odonates found here were found nowhere else in the district (*Brechmorhoga rapax* Calvert, *Argia chelata*, Calvert, *A. variabilis* Selys), and three were decidedly more common here than at lower elevations (*Epigomphus subobtusus* Selys, *Brechmorhoga vivax* Calvert, and *Hetaerina capitalis* Selys). Other Odonate species include *Paltothemis lineatipes* Karsch, *Hetaerina cruentata* (Rambur), *Cora marina* Selys, *Argia pocomana* Calvert, *A. extranea* (Hagen), *Anisagrion lais* (Selys), and *Palaemnema angelina* Selys. The new *Heteragrion* was found in the densest shade along the stream course, generally perched on the tip of a dead twig, where with its very dark coloration it would have been totally invisible were it not for its brilliant, almost luminescent white face, for which the specific name is proposed.

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LITERATURE CITED

- Calvert, P. P. 1901. *Biologia Centrali Americana*. Insecta. Neuroptera. Odonata. London (issued in parts) 1901–1908.
- Williamson, E. B. 1919. Results of the University of Michigan–Williamson expedition to Colombia, 1916–1917. IV. Notes on species of the genus *Heteragrion* Selys with descriptions of new species (Odonata). Occ. Papers, Mus. Zoology, Univ. Mich. No. 68.
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